

Claims

1. A method for producing an aqueous vehicle dispersion in which there are solid active compound vehicle particles which are based on wax, polymer or lipid, have an average diameter in the range from 10 to 10 000 nm, and comprise at least one active pharmaceutical, cosmetic and/or food technology compound, fragrance or flavor, by
 - a) mixing the active compound with the wax-, polymer- or lipid-based active compound vehicle and at least one emulsifier which leads in stage b) to the formation of a lyotropic liquid-crystalline mixed phase, at a temperature above the melting or softening point of the active compound vehicle, to form a phase B,
 - b) mechanically mixing the phase B with an aqueous phase A, which may comprise an emulsifier, at a temperature above the melting or softening point of the active compound vehicle, the weight ratio of phase B to phase A being 1:5 to 5:1, without high-pressure homogenization, to form a - preferably gellike - lyotropic liquid-crystalline mixed phase,
 - c) diluting the mixed phase with an aqueous phase, which may comprise an emulsifier, at an aqueous-phase temperature which is below the melting or softening point of the active compound vehicle, with stirring and without high-pressure homogenization, to a desired final concentration of the dispersion.
2. The method of claim 1, characterized in that the mechanical mixing in stage b) and the stirring in

stage c) take place with agitators which have a peripheral speed in the range from 1 to 20 m/s.

3. The method of claim 2, characterized in that the shearing action of the agitator corresponds to the shearing action of a household kitchen mixer.
4. The method of any one of claims 1 to 3, characterized in that the weight ratio of phase B to phase A in stage b) is 1:2 to 2:1.
5. The method of any one of claims 1 to 4, characterized in that the active compound vehicle particles are based on diglycerides, triglycerides, fatty alcohols, their esters or ethers, waxes, lipid peptides or mixtures thereof.
6. The method of any one of claims 1 to 5, characterized in that the average diameter of the active compound vehicle particles is 50 to 1000 nm.
7. An aqueous active compound vehicle dispersion obtainable by a method as claimed in any one of claims 1 to 6.
8. A method for producing a multiple dispersion by mixing a dispersion prepared by a method as claimed in any one of claims 1 to 6 with a further polyol phase or oil phase.
9. A multiple dispersion obtainable by a method as claimed in claim 8.
10. A drug, a cosmetic or a food additive comprising a dispersion as claimed in claim 7 or a multiple dispersion as claimed in claim 9.
11. Membrane-structured solid nanoparticles having an

- average diameter in the range from 10 to 10 000 nm which are solid at 25°C and have a combination of active compound vehicle particles and emulsifiers such as to form membranes which infiltrate the entire nanoparticles so that there are emulsifiers in the interior and on the surface of the nanoparticles.
12. The nanoparticles of claim 11, characterized in that there are essentially no regions without a membrane structure over the cross section of the nanoparticles.
13. The nanoparticles of claim 11 or 12, characterized in that the membranes are formed in a lyotropic liquid-crystalline mixed phase which in the presence of water is self-emulsifying.
14. The nanoparticles of any one of claims 11 to 13, characterized in that they are loaded with at least one active pharmaceutical, cosmetic and/or food technology compound in an amount of up to 60% by weight, based on the loaded nanoparticles.
15. The nanoparticles of claim 14, characterized in that they are loaded with sunscreen agents.
16. The nanoparticles of any one of claims 1 to 15, producible by a method as claimed in any one of claims 1 to 6.